

Laboratory tests in Psychiatry

Why?

1. Wellness: to monitor comorbid health problems
2. Work-up: rule out medical causes for psychiatric syndromes
3. Trouble shoot: monitor side effects of treatment

What does “metabolic” mean?

All of the chemical processes by which cells, tissues and organs produce energy, activity, and waste.

Most laboratory tests are looking at markers of metabolic activity as it relates to health problems and effects of medication. Some are specific to a disease state and may be diagnostic, others are specific to a physiologic process, and others are relevant to a particular system.

The Rainbow of Labs:

- CBC with differential
- Chemistries (7, 10, 18): lytes, Ca, Mg, BUN, creatinine, glucose, alb, etc
- Liver Function Tests
- Thyroid panel
- Drug levels
- Vitamin levels
- VDRL/RPR
- HIV

Other Tests:

- Urinalysis
- Urine drug screen
- EKG
- CXR
- Head imaging
- EEG
- VS, weight, BMI
- Sensory tests (vision, hearing)

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Wellness:

- Lipid profile: total cholesterol, HDL, LDL, tryglycerides
- Glucose
- Weight and BMI
- Vial signs: blood pressure, pulse, temperature, respirations, pain
- Others according to gender and age

Screening Work-up:

- CBC with diff
- Chem 7 (lytes, glucose, creatinine, BUN)
- LFT's
- Thyroid
- EKG
- Others if indicated: PPD, Hepatitis panel, HIV

Commonly found abnormalities in CMI patients:

- Hypertension
- Vision and hearing deficits
- Elevated glucose
- Elevated lipids
- Positive urine tox screen
- Low hgb
- Mild elevations of LFT's
- Low vitamin levels

Red Flags:

- High TSH: primary hypothyroidism, effect of lithium, 8% or affective disorders
- High CK: NMS, statins
- Low sodium: psychogenic polydypsia, SIADH
- Low hgb: bleeding, poor nutrition
- High hgb: smoking
- Elevated glucose: diabetes
- Elevated LFT's: ETOH, medications, hepatitis

Drug blood levels: standard level is drawn 12 hours after last dose.

- Therapeutic range
- Titration
- Compliance

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Medication Monitoring:

Lithium:

Prelithium workup: lyes, creatinine, BUN, thyroid, WBC, EKG

Levels: Therapeutic: 0.6 – 1.2

Toxic: >2.0, or any level that causes severe side effects

Monitor q 1-3 months

Avoid dehydration and diet changes

Avoid ibuprofen and other NSAIDS, diuretics

Anticonvulsants (AED's):

Tegretol: CBC, retic count, serum iron, LFT's, lytes, blood levels 4-12

Depakote: CBC, LFT's, lipase and amylase, blood levels 50-120

Gabapentin: no lab work needed

All other AED's: levels not correlated to response; LFT's

Topiramate and Zonisamide: renal stones, bicarb

Antipsychotics:

Clozapine: CBC with diff to monitor WBC, granulocytes, eosinopils

Clozapine, Olanzapine, Quetiapine, Risperidone: lipids, glucose, weight q3-6mo

Ziprasidone and Aripiprazole usually do not have metabolic side effects

Risperidone and typicals: elevated prolactin, decreased bone density

Ziprasidone (and all others) may increase QT interval on EKG

Benzodiazepines: may elevate LFT's. Caution in patients with liver disease

Antidepressants:

Nortriptyline has therapeutic window of 50-150

Venlafaxine and MAOI's need BP monitoring